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ABSTRACT

Findings of this report indicate that, since an earlier 1994 study, the number of Americans that own computers has increased by over 50% and the number of households using e-mail has quadrupled. Nevertheless, access to the Information Superhighway is still beyond the grasp of many Americans. While the nation-wide telephone penetration rate remains at a relatively high level of 93.8%, some pockets of Americans still have no telephone service. Whites still have a far higher telephone penetration rate (95.9%) than Blacks (86.0%) and Hispanics (86.5%). There are even more disparities in computer ownership and access to online services. Although more Americans now own computers than before, households earning more than $75,000 are approximately seven times as likely to own a computer as those earning between $5,000 and $10,000. White households are still more than twice as likely (40.8%) to own a computer than Black households (19.3%) or Hispanic households (19.4%). These gaps in ownership levels are greater than they were three years ago. Findings underscore the importance of such programs as NTIA's Telecommunications and Information Infrastructure Assistance Program and the E-Rate (a program that will allow schools and libraries to establish Internet connections at discounted rates). Twenty-four charts illustrate statistics. (AEF)

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FALLING THROUGH THE NET II:

NEW DATA ON THE DIGITAL DIVIDE

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NEW DATA ON THE DIGITAL DIVIDE

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FALLING THROUGH THE NET II:
NEW DATA ON THE DIGITAL DIVIDE

I. Introduction

The concept of "universal service" in U.S. telecommunications policy has traditionally referred to the goal that all Americans should have access to affordable telephone service. As America has increasingly become an information society, however, that concept has broadened to include access to information services. Now that a considerable portion of today's business, communication, and research takes place on the Internet, access to the computers and networks may be as important as access to traditional telephone services.

At the request of Vice President Gore, the Commerce Department's National Telecommunications and Information Administration ("NTIA") has analyzed telephone and computer penetration rates across the United States to determine who is, and who is not yet, connected. The Administration has made it a fundamental goal to connect all Americans to the information infrastructure. To address that goal, NTIA held a conference in February, 1998 on "Connecting All Americans." The data in this report sheds greater insight on recent trends in telephone and computer usage, which should assist policymakers as they consider steps to connect all Americans to the Information Superhighway.[1]

II. Background

This is the second profile of telephone and consumer penetration released by NTIA. In the first profile, published in "Falling Through the Net: A Survey of the 'Have Nots' in Rural and Urban America" (July 1995), NTIA surveyed trends in telephone subscribership, as well as ownership and usage of personal computers (PCs) and modems, using 1994 data. NTIA obtained this data by contracting with the U.S. Census Bureau to add questions on PC/modem ownership and usage in its November 1994 "Current Population Survey" ("CPS"). As we explained in that report, this data constituted the first census survey of its kind regarding PC/modem ownership.

The present survey updates those results, using similar data compiled by the Census Bureau in October 1997. The Census Bureau compiled this data through 48,000 door-to-door surveys. As in 1994, the Census Bureau has cross-tabulated the information gathered according to specific variables, such as income, race, age, educational

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[1] Data on telephone subscribership is also tracked by the Federal Communication Commission's Industry Analysis Division.

attainment, as well as geographic categories (*i.e.*, rural, urban, and central city, as well as by state and region). These tabulations permit insights into the characteristics of Americans that have access to the information infrastructure, and those that do not.

III. Highlights

The following highlights from the 1997 data are discussed below: the expanded information access, the persisting "digital divide," and a profile of the "least connected."

Expanded information access. The 1997 data demonstrate that, as a nation, Americans have increasingly embraced the Information Age through electronic access in their homes. The 1997 nation-wide data show the following nation-wide penetration rates -- 93.8% for telephones, 36.6% for personal computers (PCs); 26.3% for modems, and 18.6% for on-line access (Chart 1). Compared to the 1994 survey results, the nationwide telephone penetration has remained unchanged. The computer penetration rate, however, has grown substantially in the last three years: PC ownership has increased 51.9%, modem ownership has grown 139.1%, and E-mail access has expanded by 397.1%.

Persisting "digital divide." Despite this significant growth in computer ownership and usage overall, the growth has occurred to a greater extent within some income levels, demographic groups, and geographic areas, than in others. In fact, the "digital divide" between certain groups of Americans has *increased* between 1994 and 1997 so that there is now an even greater disparity in penetration levels among some groups. There is a widening gap, for example, between those at upper and lower income levels. Additionally, even though all racial groups now own more computers than they did in 1994, Blacks and Hispanics now lag *even further behind* Whites in their levels of PC-ownership and on-line access. The following represent some of the more significant findings.

Geographic area. Being located in a rural, urban, or central city setting can make a difference. Regarding telephones, penetration in rural areas (94.3%) currently exceeds the national average and has risen slightly (by .4 percentage points) since 1994 (Chart 2). On the other hand, urban areas (93.6%), and particularly central cities as a group (92.1%), trail the national average and show little change since 1994. By region, the Midwest's central cities exhibit the lowest phone penetration (90.4%) of all geographic areas, while the Northeast's rural areas outstrip all other geographic areas (97.2%) (Chart 9). After accounting for income, however, there is not a significant difference between rural, urban, and central city areas (Chart 3).

Although PC ownership has grown by 10-13 percentage points in all areas since 1994, central cities again lag behind the national average for PC ownership and on-line access (32.8%, 17.3%), as do rural areas (34.9%, 14.8%) (Charts 10). Urban areas are slightly higher than the average (37.2%, 19.9%). The West's urban areas (43.9%,

23.14%) rank highest in PC and on-line access, while the Northeast's central cities have the lowest penetration rates (24.7%, 12.6%) (Charts 19, 24). After accounting for income, there is not a significant difference between rural, urban, and central city areas for computer penetration (Chart 11), although rural areas still have a significantly lower rate for on-line access (Chart 20).

Income. Income greatly affects penetration levels. For telephones, households earning less than $20,000 per year trail the national average (Chart 3). Those earning less than $5,000 are the worst off: roughly one in four has no phone. The telephone penetration rate is lowest for low-income households in rural areas (74.4%). A similar direct relationship between income level and magnitude of penetration appeared in 1994, although the central city poor then had the lowest phone penetration. For computers, households below $35,000 in annual income all have PC and on-line access levels below the national average (36.6%, 26.3%) (Chart 11). Rural households earning between $5,000 - $10,000 account for the lowest penetration rate for PCs (7.9%) and on-line access (2.3%). By contrast, households earning more than $75,000 in urban areas have the highest PC-ownership rates (76%) and on-line access rates (50.3%).

Although all income groups are now more likely to own a computer, the penetration levels for those at higher incomes have grown more significantly. As a result, the gap in computer ownership levels between higher-income households and lower-income households has *expanded* in the last three years. For example, the difference in PC-ownership levels between households earning $10,000 - $14, 000 and those earning $50,000 - $74,999 was 47.7 percentage points in 1997, up from 38.2 percentage points in 1994.

Race. There is still a significant divide among racial groups in telephone penetration. Overall, White households have a far higher telephone penetration rate (95.9%) than Black (86%) or Hispanic (86.5%) households (Chart 4). This divide is particularly pronounced at incomes below $15,000: 90.3% for Whites, 76.3% for Blacks, and 78.4 % for Hispanics. "Other non-Hispanic" households have an overall telephone penetration rate (92.7%) close to the national average (93.8%), but the rate for this group in rural areas is significantly lower than average (82.8%).[2]

The divide among races is even more striking for PC ownership and on-line access. While the ownership of PCs have grown most significantly for minority groups since 1994, Blacks and Hispanics still lag far behind the national average (Chart 12).

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[2] "Other non-Hispanic" includes Asian Americans, Native Americans, Pacific Islanders, Aleuts, and Eskimos. Because of the low sample size, these groups could not be disaggregated. Based on 1990 census and 1994 CPS data, and more recent anecdotal evidence, we believe that American Indian reservations continue to lag behind the national and rural telephone penetration rates and may account for the low rates among rural "other non-Hispanics."

White households are still more than twice as likely (40.8%) to own a computer than Black (19.3%) or Hispanic (19.4%) households.[3] This divide is apparent across all income levels: even at incomes higher than $75,000, Whites are more likely to have PCs (76.3%) than are Blacks (64.1%) (Chart 13). Similarly, the rates for on-line access are nearly three times as high for Whites (21.2%) as for Blacks (7.7%) or Hispanics (8.7%).

Significantly, the digital divide between racial groups in PC-ownership has *increased* since 1994 (Chart 14). In 1997, the difference in PC-ownership levels between White and Black households was 21.5 percentage points, up from 16.8 percentage points in 1994. Similarly, the gap in PC-ownership rates between White and Hispanic households in 1997 has increased to 21.4 percentage points, up from 14.8 percentage points in 1994. This gap has increased at almost all income levels, including at incomes above $75,000, where some might have expected computer-ownership rates to converge (Chart 15).

Age. As in 1994, those furthest behind the national average for telephone penetration are the youngest (under 25 years) at 84.4% (Chart 6). Young households in rural areas are even less likely to have a telephone (81.7%). Seniors (55 years and older), by contrast, account for the highest telephone penetration (96.1%), particularly in rural areas (96.7%). With respect to computer penetration, as in 1994, seniors account for the lowest age category (21.0% for PCs, 8.8% for on-line access), followed by the young (28.0% for PCs,17.1% for on-line access) (Charts 16, 22). Those households most likely to own a PC are in the 35-44-year-old bracket (49%).

Education. The level of education affects the penetration rates much as income does: generally, the greater one's education, the greater the likelihood that person has a phone, PC, or modem. Those with college degrees are far more likely than those without any high school education to have telephone service (97.6% vs. 87.8%) (Chart 7). The comparison is even more striking with respect to PC ownership: those with a college education are almost *ten times* as likely to own a computer as those without any high school (63.2% vs. 6.8%) (Chart 17). This difference in PC-ownership is even more distinct in rural areas: 64.7% versus 5.3%. Most striking are the differences in on-line access among those with a college degree (38.4%), those with a high school diploma (9.6%), and those without any high school education (1.8%) (Chart 23).

Household Type. A new finding in the 1997 data is that family structure can also make a significant difference. Households composed of married couples with children, and families without children, exceed the national average in telephone penetration (96%

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[3] "Other non-Hispanics" have the highest computer penetration (47%) and on-line access (25.2%) of all groups in the U.S. In urban areas, these figures are even higher: 48.4% and 26.4% for computer and on-line access, respectively. However, in rural areas, these figures lag behind the national average: computer penetration is 35.8%, and on-line access is 16.1%.

and 96.7%, respectively) (Chart 8). Single parent households trail the national average: male-headed households have telephone penetration rates of 87.1%, female-headed households have rates of 86.3%. Households composed of married couples with children are roughly twice as likely to own PCs and have on-line access (57.2%, 29.4%, respectively) as are single parent households headed by a male (30.5%, 14%, respectively) or a female (25%, 9.2%) or households without families (23.5%, 18.9%, respectively) (Chart 18).

Profiles of "The Least Connected." The following are profiles of groups that are among the "least connected," according to the 1997 data.

- ***Rural Poor*** – Those living in rural areas at the lowest income levels are among the least connected. Rural households earning less than $5,000 per year have the lowest telephone penetration rates (74.4%), followed by central cities (75.2%) and urban areas (76.8%). In 1994, by contrast central city poor were the least connected. Rural households earning between $5,000-$10,000 have the lowest PC-ownership rates (7.9%) and on-line access rates (2.3%), followed by urban areas (10.5%, 4.4%) and central cities (11%, 4.6%).

- ***Rural and Central City Minorities*** – "Other non-Hispanic" households, including Native Americans, Asian Americans, and Eskimos, are least likely to have telephone service in rural areas (82.8%), particularly at low incomes (64.3%). Black and Hispanic households also have low telephone rates in rural areas (83.2% and 85%), especially at low incomes (73.6% and 72.2%). As in 1994, Blacks have the lowest PC-ownership rates in rural areas (14.9%), followed by Blacks and Hispanics in central cities (17.1% and 16.2%, respectively). On-line access is also the lowest for Black households in rural areas (5.5%) and central cities (5.8%), followed by Hispanic households in central cities (7.0%) and rural areas (7.3%).

- ***Young Households*** -- Young households (below age 25) also appear to be particularly burdened. Young, rural, low-income households have telephone penetration rates of only 65.4%, and only 15.5% of these households are likely to own a PC. Similarly, young households with children are also less likely to have phones or PCs: those in central cities have the lowest rates (73.4% for phones, 13.3% for PCs), followed by urban (76% for phones, 14.5% for PCs) and rural locales (79.6% for phones, 21.2% for PCs).

- ***Female-headed Households*** – Single-parent, female households also lag significantly behind the national average. They trail the telephone rate for

married couples with children by ten percentage points (86.3% versus 96%). They are also significantly less likely than dual-parent households to have a PC (25% versus 57.2%) or to have on-line access (9.2% versus 29.4%). Female-headed households in central cities are particularly unlikely to own PCs or have on-line access (20.2%, 6.4%), compared to dual-parent households (52%, 27.3%) or even male-headed households (28%, 11.2%) in the same areas.

IV. Policy Implications

The data show that, although the telephone penetration rate has not changed, an increasing number of Americans have become connected to the Information Superhighway in the last three years. More Americans have bought PCs and are connecting to on-line services than in 1994. Although some groups are purchasing and using computers more than others, all groups have shown an increase in PC-ownership levels.

Nevertheless, significant segments of the population still remain unconnected by telephone and/or computer. The above data demonstrate that there are still pockets of "have nots" among the low-income, minorities, and the young, particularly in rural areas and central cities. Policymakers should continue to focus on connecting these populations so that they too can communicate by telephone or computer. These populations are among those, for example, that could most use electronic services to find jobs, housing, or other services. Because it may take time before these groups become connected at home, it is still essential that schools, libraries, and other community access centers ("CACs") provide computer access in order to connect significant portions of our population.

V. Methodology and Definitions

The tables and charts that follow draw upon the results of the October 1997 and the November 1994 CPS data compiled by the Census Bureau. The CPS samples were selected from the 1990 Decennial census files with coverage in all 50 states and the District of Columbia. The sample is continually updated to account for new residential construction. The United States was divided into 2,007 geographic areas, typically a county or several contiguous counties. A total of 754 geographic areas were selected for the 1997 CPS survey. About 48,000 households were interviewed for this survey.

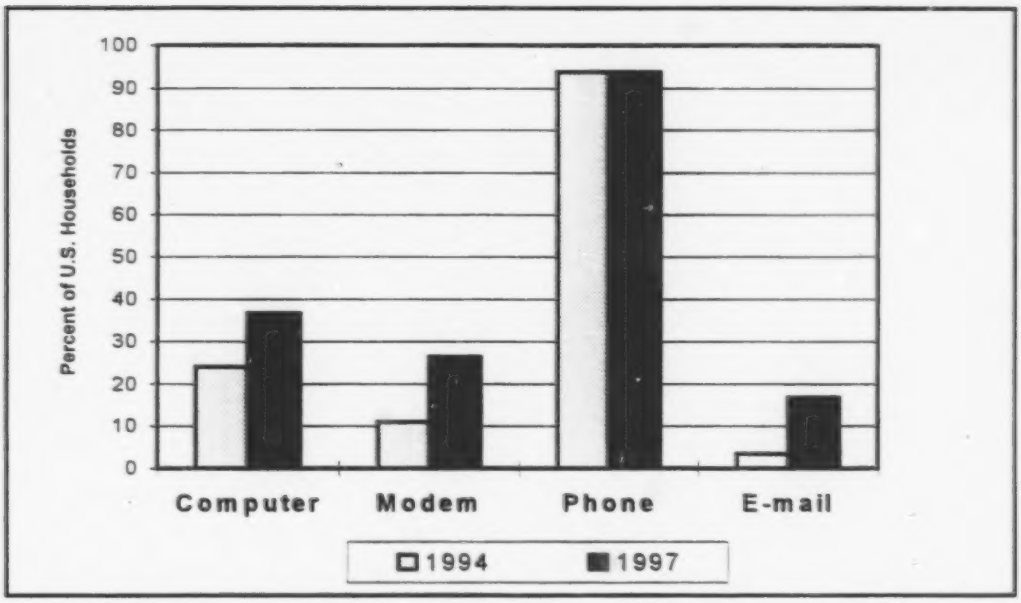
The Census Bureau defines terms as follows. Race is defined as a concept used by individuals as a self-identification of "biological stock." Such identifiers include White, Black, Asian or Pacific Islander, American Indian, Eskimo, or Aleut. In addition to the race identifier, all respondents were asked if they classify themselves as Hispanic in origin. To prevent double counting of people of various races who also claimed

Hispanic origin, the Census Bureau created the following race categories: White - non-Hispanic, Black - non-Hispanic, other - non-Hispanic, and Hispanic. The "other-non-Hispanic category" includes Asians and Pacific Islanders, American Indians, Eskimos, and Aleuts.

With respect to geographic areas, the Census Bureau defines "urban" as designated areas comprised of all territory, population, and housing units of 2500 or more persons. "Rural" areas constitute territory, population and housing units not classified as urban; "places of less than 2500" persons and, what the Census Bureau refers to as, "not in places" (areas not part of or outside of designated Census areas). Our analysis also includes areas designated as "central city" areas or part(s) of a Metropolitan Statistical Area ("MSA") or Primary Metropolitan Statistical Area ("PMSA") that meet the standards of the "largest place," or places (based on population and other criteria within that MSA or PMSA.

Chart 1: Percent of U.S. Households with a Computer, Modem, Telephone, and E-mail

1994 vs. 1997

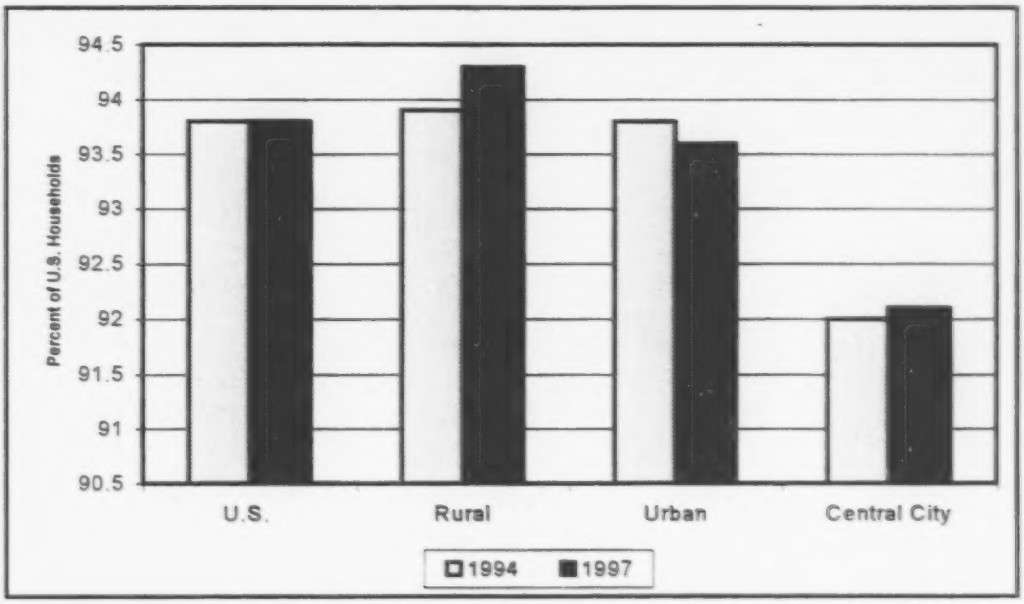


	Computer	Modem	Phone	E-mail
1994	24.1	11	93.8	3.4
1997	36.6	26.3	93.8	16.9

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using November 1994 and October 1997 Current Population Surveys.

Chart 2: Percent of U.S. Households with a Telephone
By U.S., Rural, Urban, and Central City Areas

1994 vs. 1997

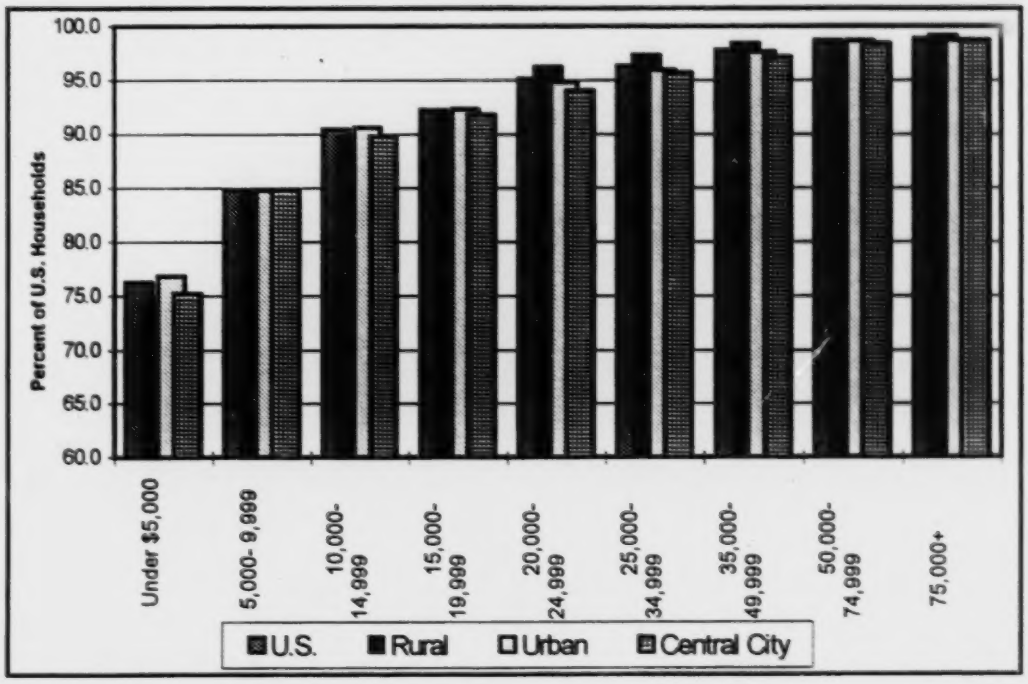


	U.S.	Rural	Urban	Central City
1994	93.8	93.9	93.8	92
1997	93.8	94.3	93.6	92.1

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using November 1994 and October 1997 Current Population Surveys.

Chart 3: Percent of U.S. Households with a Telephone
By Income
By U.S., Rural, Urban, and Central City Areas

1997

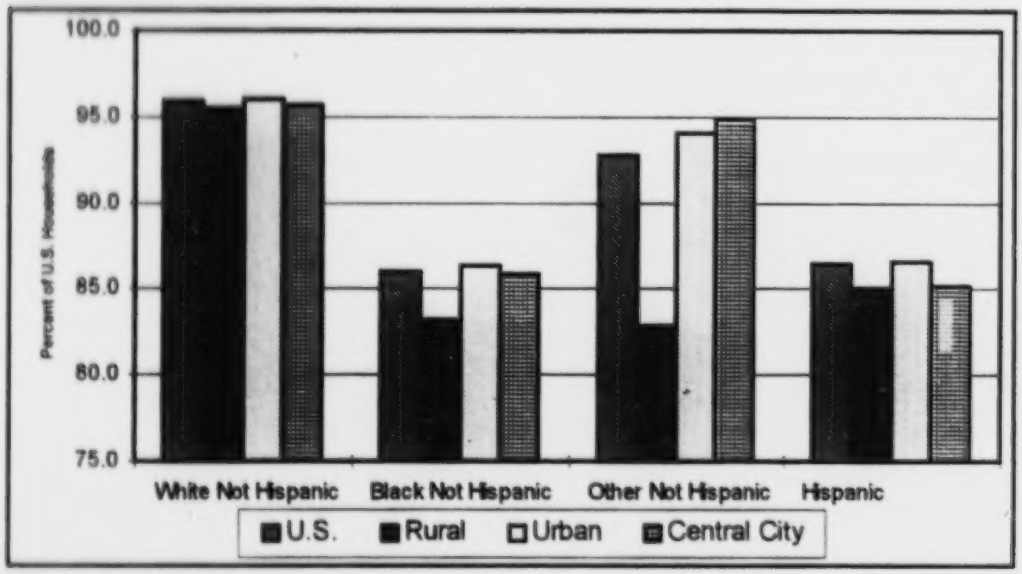


	U.S.	Rural	Urban	Central City
Under $5,000	76.3	74.4	76.8	75.2
5,000-9,999	84.8	84.8	84.8	84.8
10,000-14,999	90.4	89.7	90.6	89.7
15,000-19,999	92.2	91.9	92.3	91.8
20,000-24,999	95.1	96.2	94.8	94.0
25,000-34,999	96.3	97.3	95.9	95.7
35,000-49,999	97.8	98.4	97.6	97.1
50,000-74,999	98.6	98.4	98.6	98.4
75,000+	98.8	99.1	98.7	98.7

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 4: Percent of U.S. Households with a Telephone
By Race/Origin
By U.S., Rural, Urban, and Central City Areas

1997

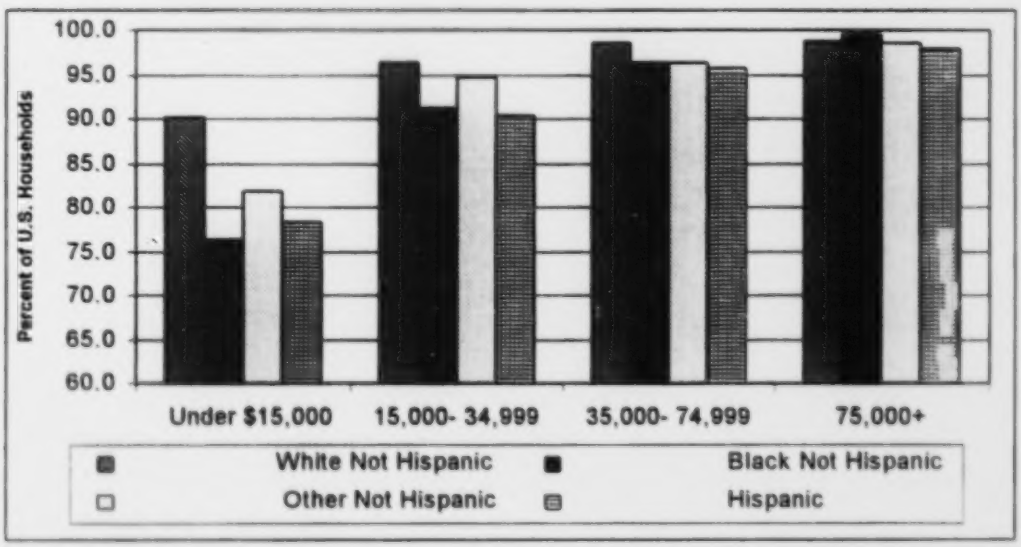


	U.S.	Rural	Urban	Central City
White Not Hispanic	95.9	95.5	96.0	95.7
Black Not Hispanic	86.0	83.2	86.3	85.9
Other Not Hispanic	92.7	82.8	94.0	94.9
Hispanic	86.5	85.0	86.6	85.2

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 5: Percent of U.S. Households with a Telephone
By Income
By Race/Origin

1997

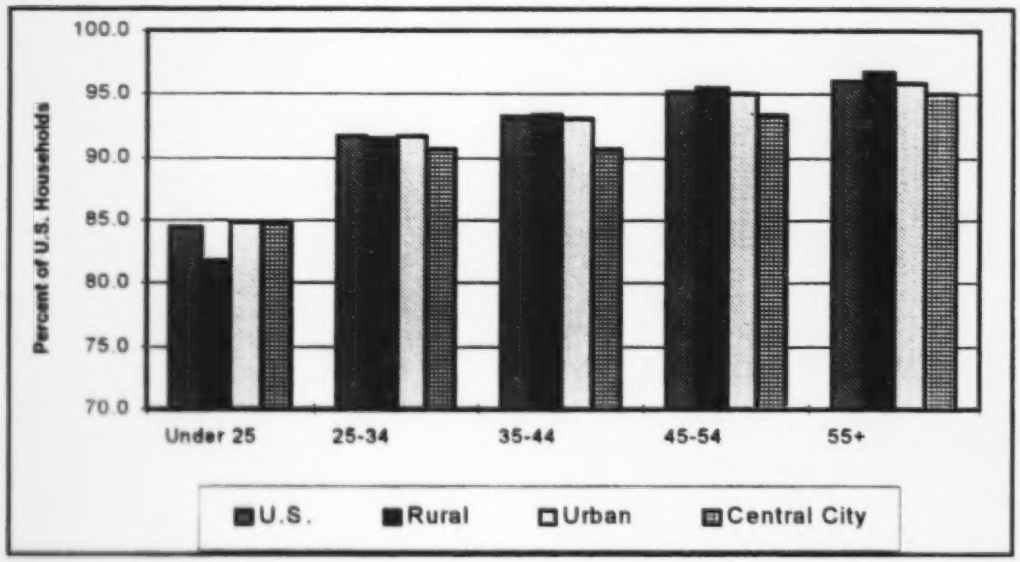


	Under $15,000	15,000-34,999	35,000-74,999	75,000+
White-Not Hispanic	90.3	96.3	98.6	98.8
Black-Not Hispanic	76.3	91.3	96.4	99.5
Other-Not Hispanic	81.8	94.6	96.4	98.6
Hispanic	78.4	90.4	95.7	98.0

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 6: Percent of U.S. Households with a Telephone
By Age
By U.S., Rural, Urban, and Central City Areas

1997

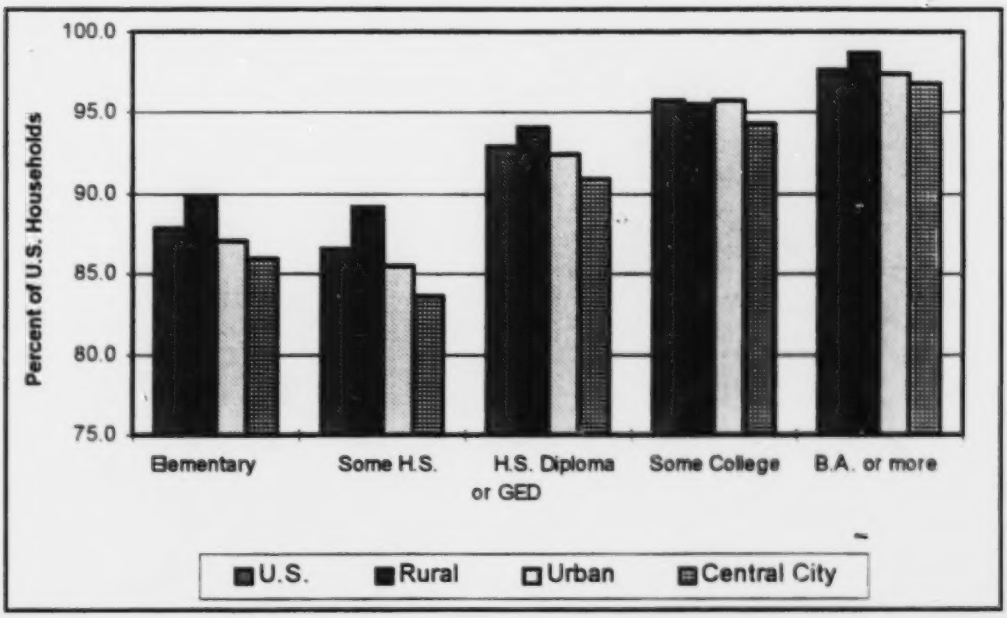


	U.S.	Rural	Urban	Central City
Under 25	84.4	81.7	84.9	84.8
25-34	91.7	91.5	91.7	90.6
35-44	93.2	93.3	93.1	90.7
45-54	95.2	95.5	95.0	93.3
55+	96.1	96.7	95.9	95.1

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 7: Percent of U.S. Households with a Telephone
By Education
By U.S., Rural, Urban, and Central City Areas

1997

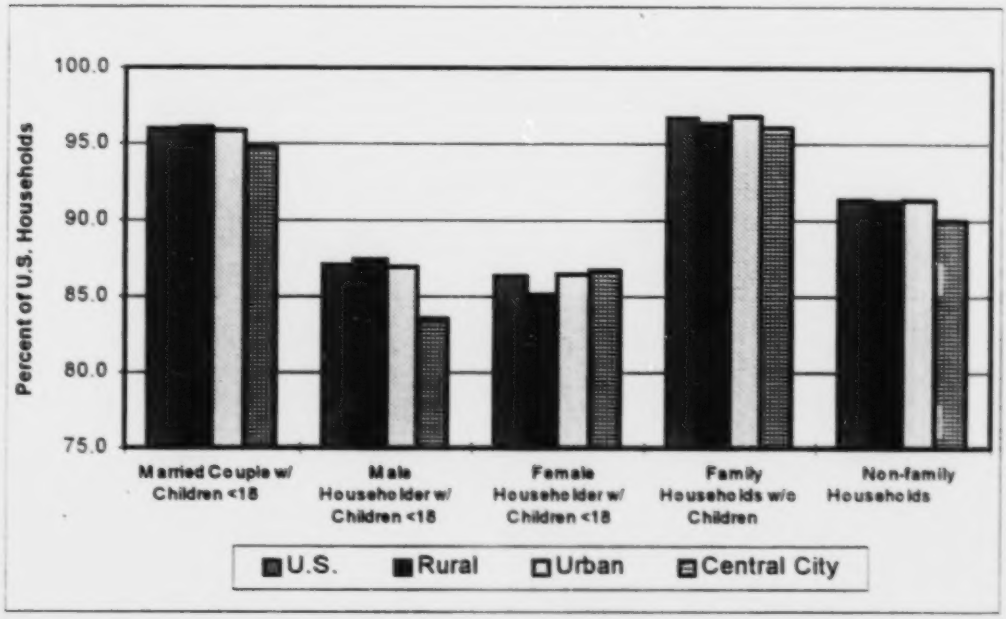


	U.S.	Rural	Urban	Central City
Elementary	87.8	89.8	87.0	86.0
Some H.S.	86.5	89.2	85.5	83.6
H.S. Diploma or GED	92.9	94.1	92.4	90.9
Some College	95.7	95.5	95.7	94.3
B.A. or more	97.6	98.7	97.4	96.8

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 8: Percent of U.S. Households with a Telephone
By Household Type
By U.S., Rural, Urban, and Central City Areas

1997

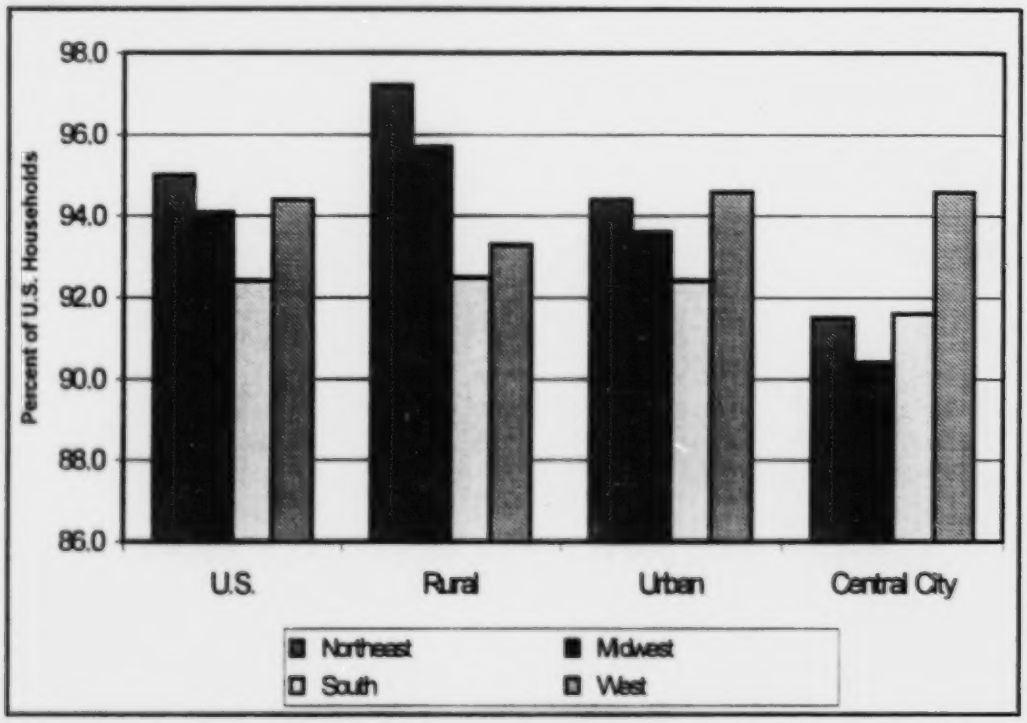


	U.S.	Rural	Urban	Central City
Married Couple w/ Children <18	96.0	96.1	95.9	94.7
Male Householder w/ Children <18	87.1	87.5	86.9	83.5
Female Householder w/ Children <18	86.3	85.1	86.5	86.7
Family Households w/o Children	96.7	96.4	96.8	96.1
Non-family Households	91.4	91.2	91.4	90.0

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 9: Percent of U.S. Households with a Telephone
By Region
By U.S., Rural, Urban, and Central City Areas

1997

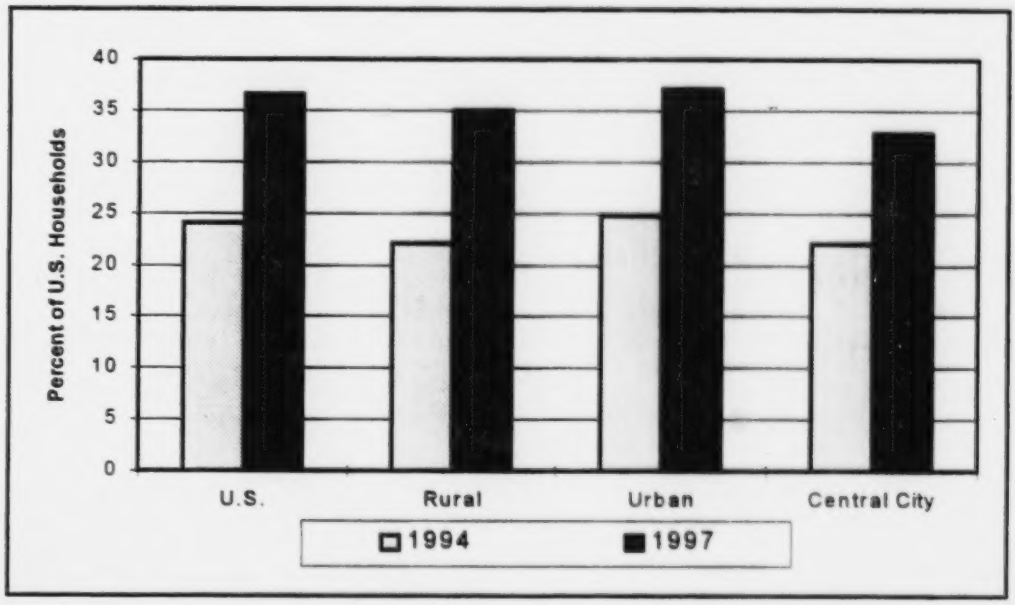


	U.S.	Rural	Urban	Central City
Northeast	95.0	97.2	94.4	91.5
Midwest	94.1	95.7	93.6	90.4
South	92.4	92.5	92.4	91.6
West	94.4	93.3	94.6	94.6

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 10: Changes in Percent of U.S. Households with a Computer By U.S., Rural, Urban, and Central City Areas

1994 vs. 1997

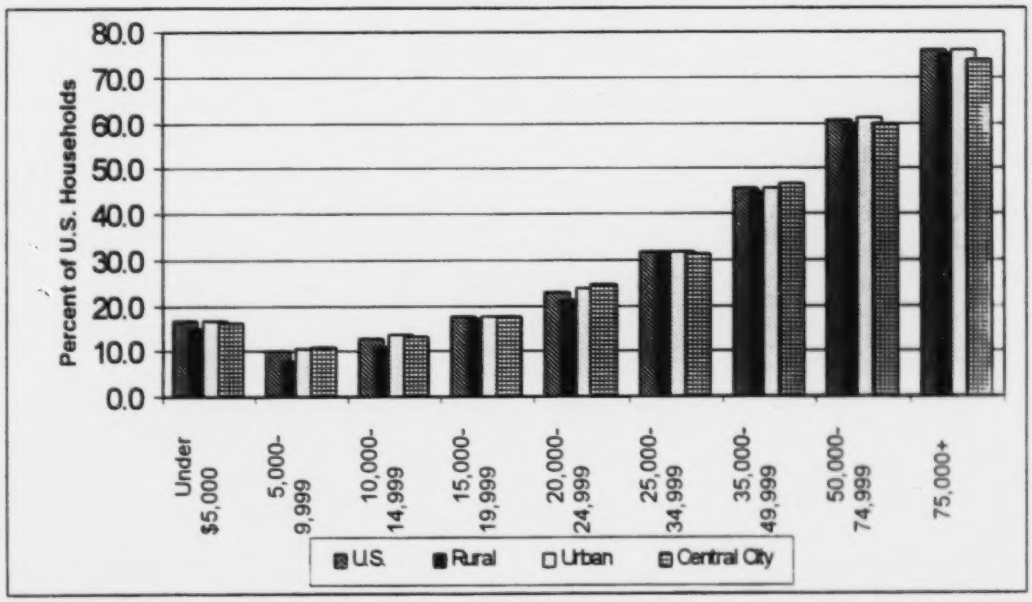


	U.S.	Rural	Urban	Central City
1994	24.1	22.1	24.8	22
1997	36.6	34.9	37.2	32.8

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using November 1994 and October 1997 Current Population Surveys.

Chart 11: Percent of U.S. Households with a Computer
By Income
By U.S., Rural, Urban, and Central City Areas

1997

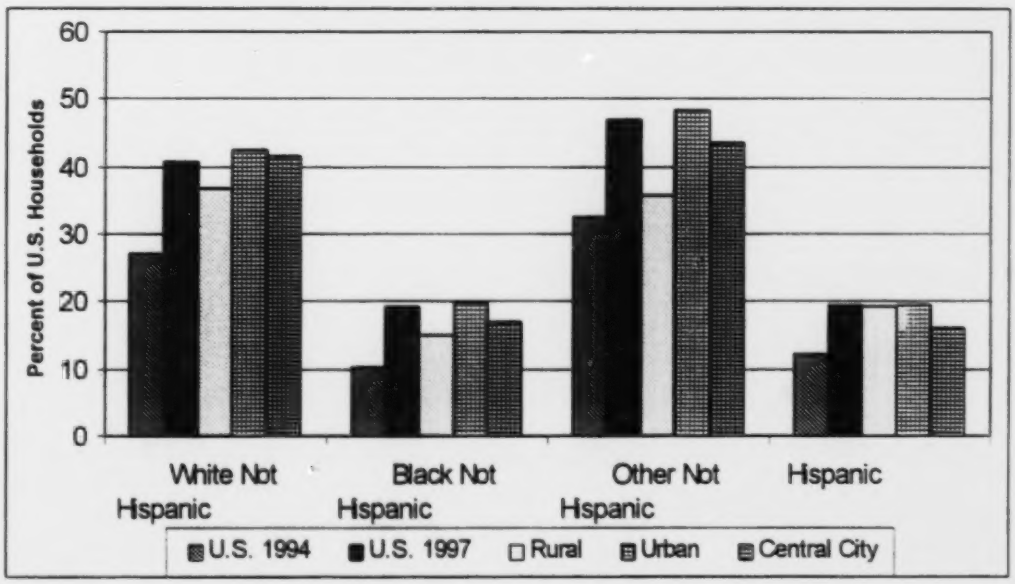


	U.S.	Rural	Urban	Central City
Under $5,000	16.5	15.0	16.9	16.4
5,000-9,999	9.9	7.9	10.5	11.0
10,000-14,999	12.9	11.0	13.5	13.2
15,000-19,999	17.4	17.0	17.5	17.8
20,000-24,999	23.0	20.9	23.7	24.4
25,000-34,999	31.7	31.7	31.7	31.0
35,000-49,999	45.6	45.0	45.9	46.4
50,000-74,999	60.6	59.6	60.9	60.0
75,000+	75.9	75.3	76.0	73.9

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 12: Percent of U.S. Households with a Computer
By Race/Origin
By U.S., Rural, Urban, and Central City Areas

1997

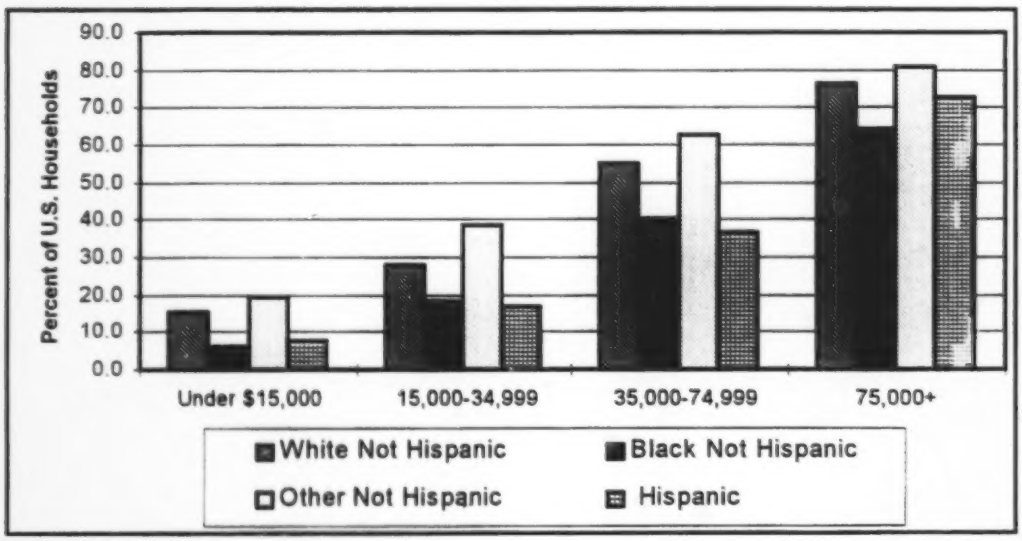


	U.S. 1994	U.S. 1997	Rural	Urban	Central City
White Not Hispanic	27.1	40.8	36.7	42.5	41.5
Black Not Hispanic	10.3	19.3	14.9	19.9	17.1
Other Not Hispanic	32.6	47.0	35.8	48.4	43.5
Hispanic	12.3	19.4	19.2	19.4	16.2

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using November 1994 and October 1997 Current Population Surveys.

Chart 13: Percent of U.S. Households with a Computer
By Income
By Race/Origin

1997

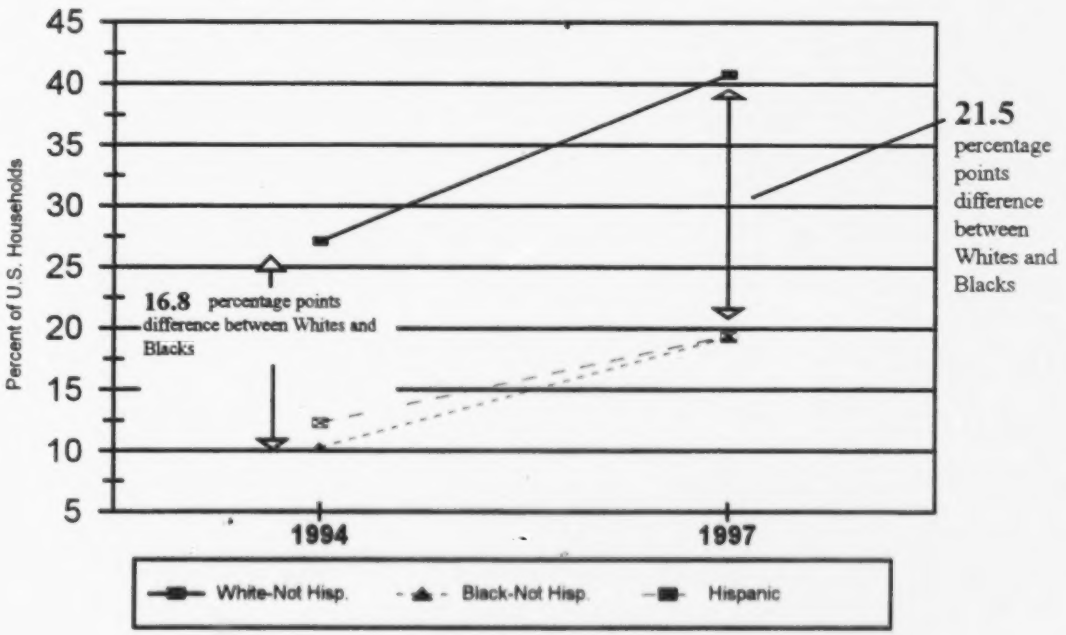


	Under $15,000	15,000-34,999	35,000-74,999	75,000+
White Not Hispanic	15.4	28.0	55.1	76.3
Black Not Hispanic	6.3	18.2	40.2	64.1
Other Not Hispanic	19.1	38.5	62.6	81.0
Hispanic	7.8	16.6	36.8	72.8

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 14: U.S. Household Computer Penetration Gap By Income

1994 vs. 1997



	White-Not Hispanic	Black-Not Hispanic	Hispanic
1994	27.1	10.3	12.3
1997	40.8	19.3	19.4

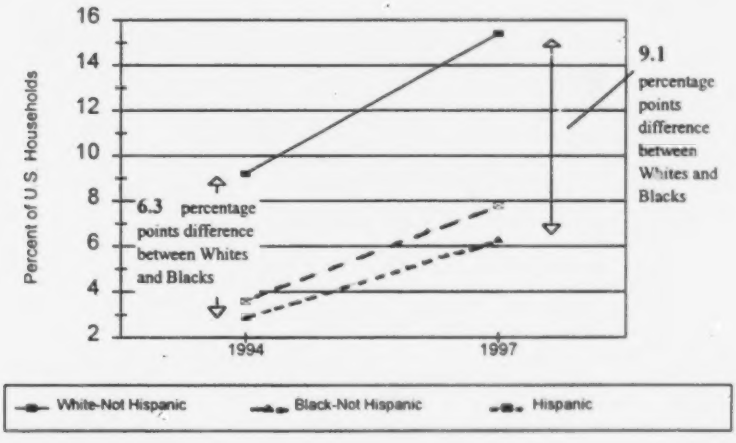
Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Charts 15a-b: U.S. Household Computer Penetration Gap By Income

1994 vs. 1997

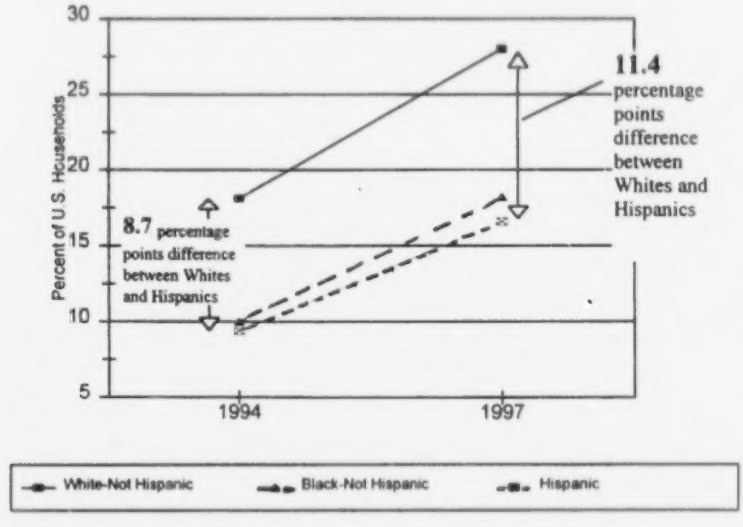
Under $15,000

	White-Not Hispanic	Black-Not Hispanic	Hispanic
1994	9.2	2.9	3.6
1997	15.4	6.3	7.8



$15,000 – 34,999

	White-Not Hispanic	Black-Not Hispanic	Hispanic
1994	18.1	10	9.4
1997	28	18.2	16.6



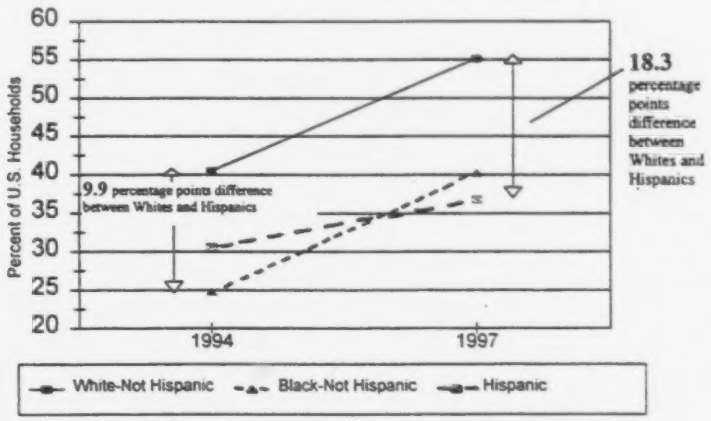
Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using November 1994 and October 1997 Current Population Surveys.

Charts 15c-d: U.S. Household Computer Penetration Gap By Income

1994 vs. 1997

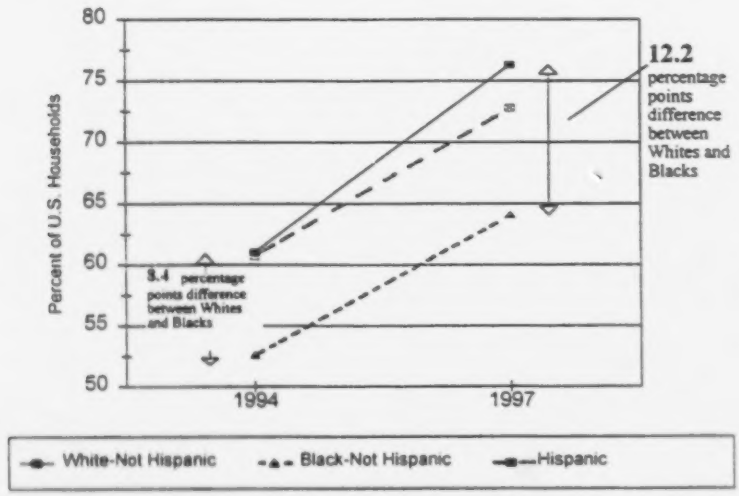
$35,000 – 74,999

	White-Not Hispanic	Black-Not Hispanic	Hispanic
1994	40.5	24.8	30.6
1997	55.1	40.2	36.8



$75,000+

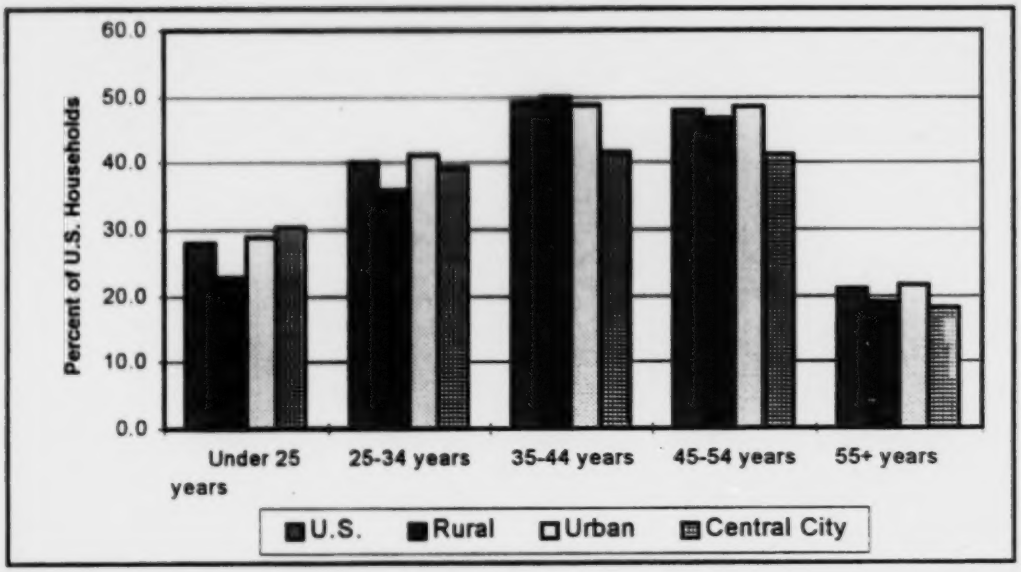
	White-Not Hispanic	Black-Not Hispanic	Hispanic
1994	61	52.6	60.7
1997	76.3	64.1	72.8



Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using November 1994 and October 1997 Current Population Surveys.

Chart 16: Percent of U.S. Households with a Computer
By Age
By U.S., Rural, Urban, and Central City Areas

1997

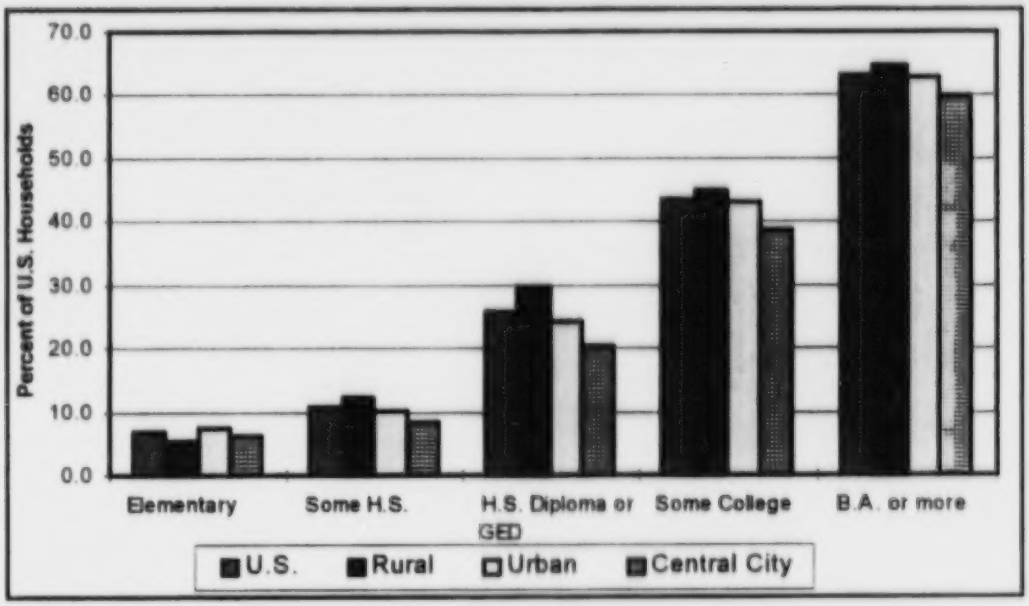


	U.S.	Rural	Urban	Central City
Under 25 years	28.0	22.8	28.9	30.2
25-34 years	40.0	35.8	41.2	39.1
35-44 years	49.0	49.8	48.8	41.6
45-54 years	48.0	46.7	48.5	41.3
55+ years	21.0	19.0	21.7	18.2

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 17: Percent of U.S. Households with a Computer
By Education
By U.S., Rural, Urban, and Central City Areas

1997

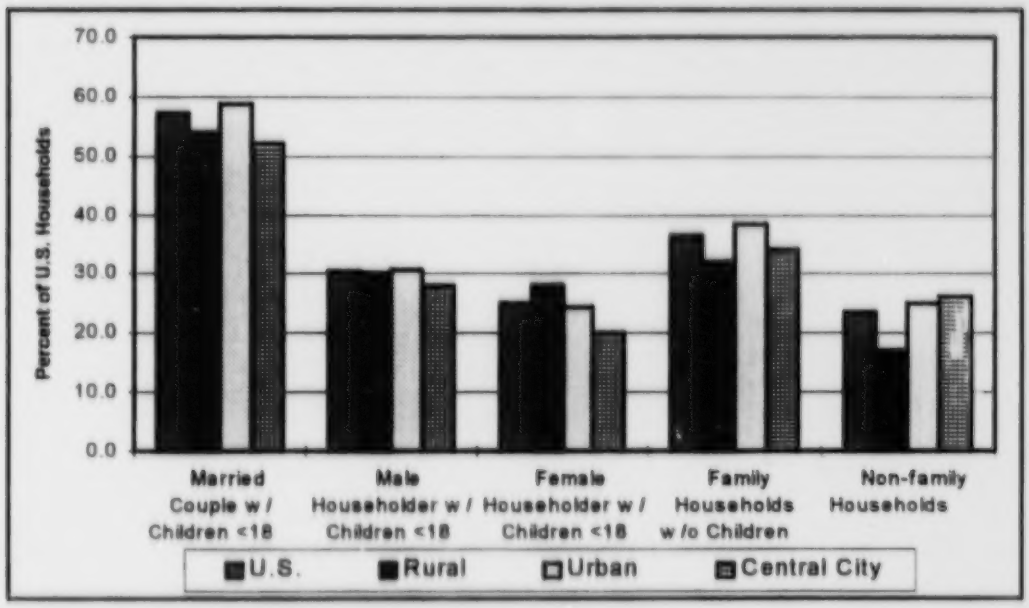


	U.S.	Rural	Urban	Central City
Elementary	6.8	5.3	7.4	6.3
Some H.S.	10.9	12.2	10.3	8.4
H.S. Diploma or GED	25.7	29.5	24.1	20.2
Some College	43.4	44.9	43.0	38.7
B.A. or more	63.2	64.7	62.9	59.5

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 18: Percent of U.S. Households with a Computer By Household Type By U.S., Rural, Urban, and Central City Areas

1997

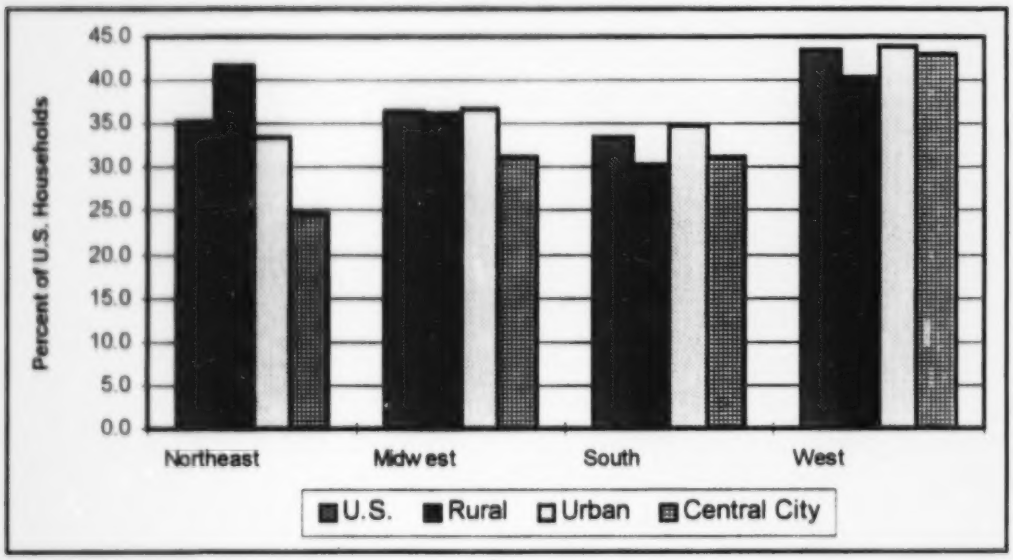


	U.S.	Rural	Urban	Central City
Married Couple w/ Children <18	57.2	53.9	58.6	52.0
Male Householder w/ Children <18	30.5	30.2	30.6	28.0
Female Householder w/ Children <18	25.0	28.1	24.5	20.2
Family Households w/o Children	36.4	32.0	38.2	34.1
Non-family Households	23.5	17.0	25.0	26.1

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 19: Percent of U.S. Households with a Computer
By Region
By U.S., Rural, Urban, and Central City Areas

1997

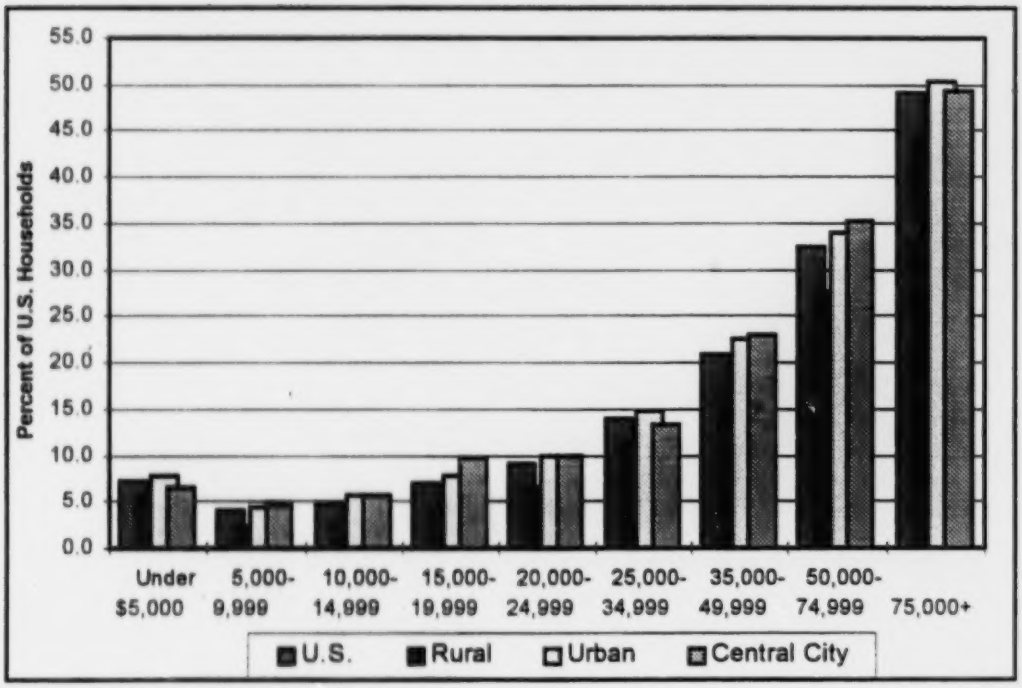


	U.S.	Rural	Urban	Central City
Northeast	35.2	41.7	33.4	24.7
Midwest	36.5	36.2	36.7	31.1
South	33.4	30.2	34.8	31.1
West	43.4	40.3	43.9	42.9

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey

Chart 20: Percent of U.S. Households with On-line Service
By Income
By U.S., Rural, Urban, and Central City Areas

1997

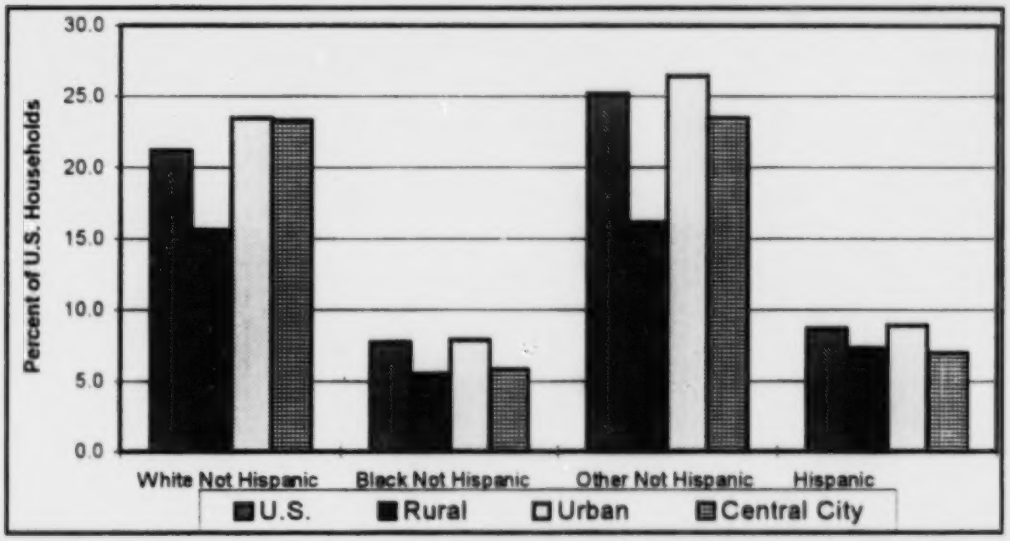


	U.S.	Rural	Urban	Central City
Under $5,000	7.2	5.6	7.7	6.6
5,000-9,999	3.9	2.3	4.4	4.6
10,000-14,999	4.9	2.8	5.6	5.7
15,000-19,999	7.0	4.5	7.8	9.6
20,000-24,999	9.0	6.5	9.9	10.0
25,000-34,999	13.9	11.6	14.7	13.3
35,000-49,999	20.8	16.0	22.6	23.0
50,000-74,999	32.4	27.6	33.9	35.1
75,000+	49.2	44.4	50.3	49.4

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 21: Percent of U.S. Households with On-line Service
By Race/Origin
By U.S., Rural, Urban, and Central City Areas

1997

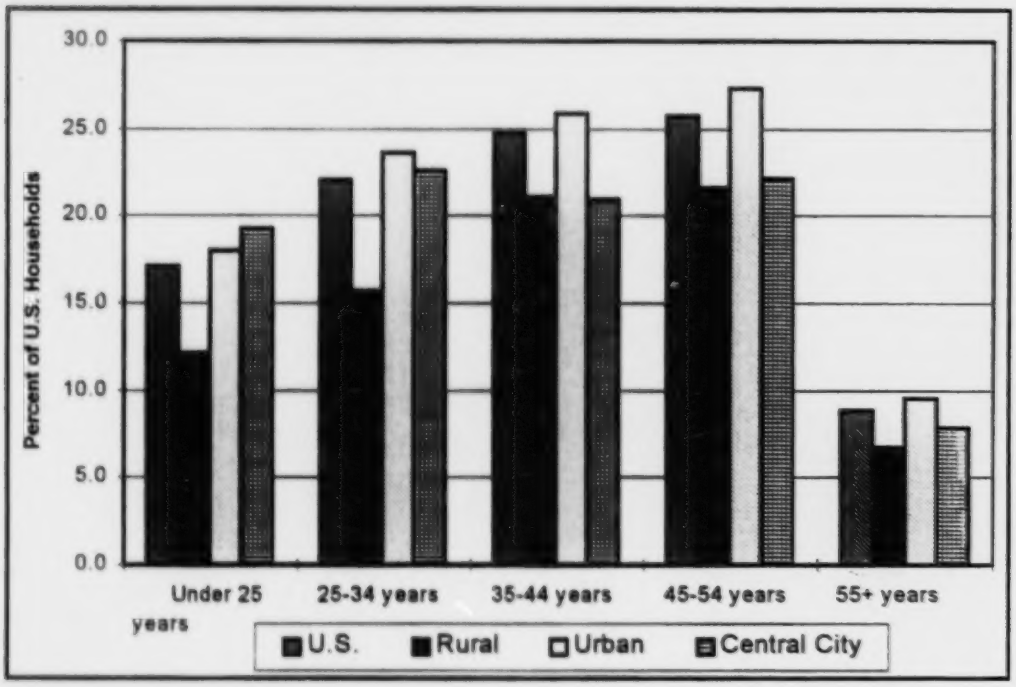


	U.S.	Rural	Urban	Central City
White Not Hispanic	21.2	15.6	23.5	23.3
Black Not Hispanic	7.7	5.5	7.9	5.8
Other Not Hispanic	25.2	16.1	26.4	23.5
Hispanic	8.7	7.3	8.9	7.0

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 22: Percent of U.S. Households with On-line Service
By Age
By U.S., Rural, Urban, and Central City Areas

1997

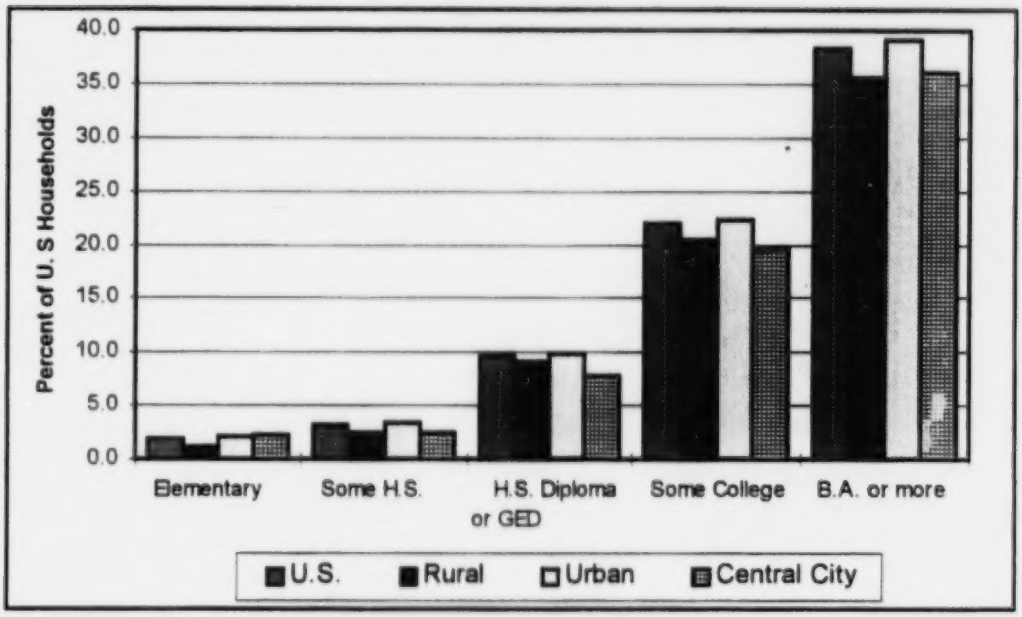


	U.S.	Rural	Urban	Central City
Under 25 years	17.1	12.1	18.0	19.2
25-34 years	22.0	15.7	23.6	22.6
35-44 years	24.7	21.0	25.9	20.9
45-54 years	25.8	21.6	27.3	22.2
55+ years	8.8	6.7	9.5	7.8

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 23: Percent of U.S. Households with On-line Service
By Education
By U.S., Rural, Urban, and Central City Areas

1997

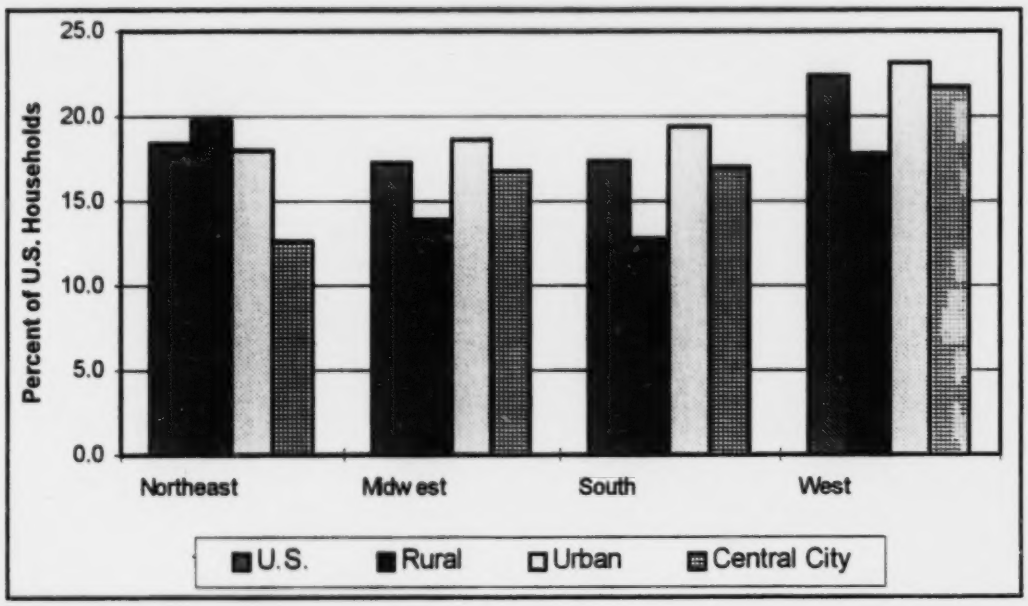


	U.S.	Rural	Urban	Central City
Elementary	1.8	1.2	2.1	2.2
Some H.S.	3.1	2.5	3.4	2.5
H.S. Diploma or GED	9.6	9.2	9.8	7.9
Some College	21.9	20.5	22.3	19.7
B.A. or more	38.4	35.6	39.0	36.1

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.

Chart 24: Percent of U.S. Households with On-line Service
By Region
By U.S., Rural, Urban, and Central City Areas

1997



	U.S.	Rural	Urban	Central City
Northeast	18.4	19.7	18.0	12.6
Midwest	17.3	13.9	18.6	16.7
South	17.4	12.7	19.4	17.0
West	22.4	17.8	23.1	21.7

Source: National Telecommunications and Information Administration and U.S. Census Bureau, U.S. Department of Commerce, using October 1997 Current Population Survey.